

CoE 197 ME8 Exercise 2

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The screenshot shows a web browser on the left displaying the README for 'ME8_Containerization_and_Docker' and a terminal window on the right. The terminal shows the execution of the following commands:

```
root@786b94c53c6d:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu xenial-security InRelease [102 kB]
Get:2 http://security.ubuntu.com/ubuntu xenial-security/universe Sources [29.6 kB]
Get:3 http://archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
Get:4 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [308 kB]
Get:5 http://security.ubuntu.com/ubuntu xenial-security/restricted amd64 Packages [14.1 kB]
Get:6 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [176 kB]
Get:7 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [176 kB]
Get:8 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [102 kB]
Get:9 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [102 kB]
Get:10 http://archive.ubuntu.com/ubuntu xenial/universe Sources [9802 kB]
Get:11 http://archive.ubuntu.com/ubuntu xenial/main amd64 Packages [1558 kB]
Get:12 http://archive.ubuntu.com/ubuntu xenial/restricted amd64 Packages [14.1 kB]
Get:13 http://archive.ubuntu.com/ubuntu xenial/universe amd64 Packages [9827 kB]
Get:14 http://archive.ubuntu.com/ubuntu xenial/multiverse amd64 Packages [176 kB]
Get:15 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [186 kB]
Get:16 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [652 kB]
Get:17 http://archive.ubuntu.com/ubuntu xenial-updates/restricted amd64 Packages [176 kB]
Get:18 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [176 kB]
Get:19 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [176 kB]
Get:20 http://archive.ubuntu.com/ubuntu xenial-backports/main amd64 Packages [492 kB]
Get:21 http://archive.ubuntu.com/ubuntu xenial-backports/universe amd64 Packages [176 kB]
Fetched 23.9 MB in 5s (4409 kB/s)
Reading package lists... Done
root@786b94c53c6d:/#
```

4. Now we can install the `ping` command.

Call `apt-get install iputils-ping` to install the package containing `ping`:

```
root@786b94c53c6d:/# apt-get install iputils-ping
Reading package lists... Done
```

In this first image, steps 1-4 of exercise 2 were executed successfully. The 'Getting setup' part of the exercise was no longer executed since I already have the Ubuntu 16.04 image from exercise 1.

The screenshot shows a web browser on the left displaying the README for 'ME8_Containerization_and_Docker' and a terminal window on the right. The terminal shows the execution of the following commands:

```
root@a233994c3fa2:/# ping google.com
PING google.com (142.250.204.110) 56(84) bytes of data:
64 bytes from 142.250.204.110: icmp_seq=1 ttl=37 time=35.3 ms
64 bytes from 142.250.204.110: icmp_seq=2 ttl=37 time=33.1 ms
64 bytes from 142.250.204.110: icmp_seq=3 ttl=37 time=35.5 ms
64 bytes from 142.250.204.110: icmp_seq=4 ttl=37 time=36.1 ms
64 bytes from 142.250.204.110: icmp_seq=5 ttl=37 time=39.4 ms
64 bytes from 142.250.204.110: icmp_seq=6 ttl=37 time=35.0 ms
^C
--- google.com ping statistics ---
7 packets transmitted, 6 received, 14% packet loss, time 6009ms
rtt min/avg/max/mdev = 33.160/35.789/39.489/1.910 ms
root@a233994c3fa2:/# exit
exit

C:\Users\ysabe>docker ps -a
CONTAINER ID   IMAGE      COMMAND                  CREATED         STATUS         PORTS          NAMES
a233994c3fa2   ubuntu:16.04   "/bin/bash"              6 minutes ago   Exited (0) 22 seconds ago           sting_joliot

C:\Users\ysabe>docker commit --help
Usage: docker commit [OPTIONS] CONTAINER [REPOSITORY[:TAG]]

Create a new image from a container's changes

Options:
  -a, --author string      Author (e.g., "John Hannibal Smith <channibal@team.com>")
  -c, --change list        Apply Dockerfile instruction to the created image
  -m, --message string     Commit message
  -p, --pause              Pause container during commit (default true)
$

C:\Users\ysabe>docker commit -a 'David Elnor' -m 'Added ping utility.' 786b94c53c6d
sha256:78ba83008a61a09f9eae8caead0966ff501457c23df0f63e0651253b3d0e3
$

C:\Users\ysabe>docker images
REPOSITORY    TAG       IMAGE ID       CREATED
delner/ping   latest    78ba83008a6   About a minute ago
ubuntu        16.04     6a2f32de169d   4 days ago
$

C:\Users\ysabe>docker commit -a 'Bela' -m 'Added ping utility.' a233994c3fa2
sha256:c2d3f0c1e40fd453a7185602d3dcf82b8b866a29fa69ed06d8badf5849a636
$

C:\Users\ysabe>docker images
REPOSITORY    TAG       IMAGE ID       CREATED   SIZE
ysabela/ping  latest    c2d3f0c1e40f   6 minutes ago   170MB
ubuntu        16.04     9ff95a467e45   5 days ago     135MB
$
```

In the image above, step 5 was executed as well as steps 1-2 of the 'Committing Changes' part of the exercise. The docker commit did not run at first so I tried replacing the single quotes with double quotes. As a result, the command was able to run successfully.

ME8_Containerization_and_Dock

github.com/CoE-1975-2s2021/ME8_Containerization_and_Docker/tree/main...

README.md

```
docker commit -a "Bela Coronel" -m "Added ping utility" root@3ab21a456c9f:ping
sha256:78ba830008a61a09f9eae8ca4ead0966ff501457c23df0f635e0651253b3d0e3
$
```

Then check `docker images` to see your new image:

```
$ docker images
REPOSITORY    TAG       IMAGE ID       CREATED
delner/ping   latest    78ba830008a6   About a minute ago
ubuntu        16.04     6a2f32de169d   4 days ago
$
```

3. Finally run your new image in a new container to see it in action!

```
$ docker run -it --rm delner/ping /bin/bash
root@3ab21a456c9f:/# ping google.com
PING google.com (172.217.4.206) 56(84) bytes of data:
64 bytes from lga15s48-in-f14.1e100.net (172.217.4.206): icmp_seq=1 ttl=37 time=1
64 bytes from lga15s48-in-f14.1e100.net (172.217.4.206): icmp_seq=2 ttl=37 time=0
64 bytes from lga15s48-in-f14.1e100.net (172.217.4.206): icmp_seq=3 ttl=37 time=0
^C
--- google.com ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2024ms
rtt min/avg/max/mdev = 0.352/0.620/1.129/0.360 ms
root@3ab21a456c9f:/#
```

END OF EXERCISE 2

root@2f01cedadb33:/

C:\Users\ysabe>docker commit -a "Bela Coronel" -m "Added ping utility" a233 ysabela/ping
sha256:c2d3f0c1e40fd453a718560d3decf82b8b66a29fa69ed06d08badf5849a636

C:\Users\ysabe>docker images
REPOSITORY TAG IMAGE ID CREATED SIZE
ysabela/ping latest c2d3f0c1e40f 6 minutes ago 170MB
ubuntu 16.04 9ff95a467e45 5 days ago 135MB

C:\Users\ysabe>docker run -it --rm ysabela/ping /bin/bash
root@2f01cedadb33:/# ping google.com
PING google.com (142.250.204.110) 56(84) bytes of data:
64 bytes from 142.250.204.110: icmp_seq=1 ttl=37 time=31.7 ms
64 bytes from 142.250.204.110: icmp_seq=2 ttl=37 time=34.4 ms
64 bytes from 142.250.204.110: icmp_seq=3 ttl=37 time=35.1 ms
64 bytes from 142.250.204.110: icmp_seq=4 ttl=37 time=35.4 ms
64 bytes from 142.250.204.110: icmp_seq=5 ttl=37 time=35.6 ms
64 bytes from 142.250.204.110: icmp_seq=6 ttl=37 time=34.2 ms
^C
--- google.com ping statistics ---
6 packets transmitted, 6 received, 0% packet loss, time 5008ms
rtt min/avg/max/mdev = 31.715/34.455/35.614/1.331 ms
root@2f01cedadb33:/#

As you can see, the modified image is now running successfully with its added ping utility.